Office Action Summary	Application No.	Applicant(s)	
	10/519,169	KIKUKAWA ET AL.	
	Examiner	Art Unit	
	GERARD T. HIGGINS	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :11/16/2005, 03/22/2006, and 11/06/2007.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to because Figures 1 and 14 are too dark to be viewable. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

a. On page 8, line 7, the dielectric layer **31m** should just be **31**.

b. On page 11, line 4 and page 26, line 11 "irradiat" is spelt wrong.

c. On page 19, lines 9-10, these appear to be contradicting inequalities, please check the inequalities at lines 17 and 21 on the same page as well.

d. On page 22, line 24, lanthanoid is not a rare earth element. It appears applicants meant lanthanum, which is a rare earth element of the lanthanide series.

e. There are other errors that are present in the published application; however, these errors are not in the specification as filed. Please see page 8, line 15 and page 22, line 17.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant claims to form recording marks by "decomposing the noble metal oxide." They then subsequently claim "irreversibly depositing noble metal particles in the noble metal oxide layer." These statements lead the claim to be indefinite as it suggests that the noble metal oxide particles are added afterwards from the outside, rather than decomposed within the layer.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Sato (JP 06-262854), machine translation included.

Sato discloses an optical recording medium comprising a noble metal oxide recording layer of platinum oxide at [0018], [0025], and [0026] of the detailed description.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji et al., A Near-Field Recording and Readout Technology Using a Metallic Probe in an Optical Disk, in view of Nagase et al. (JP 2002-109786), machine translation included.

A Near-Field Recording and Readout Technology Using a Metallic Probe in an Optical Disk sets forth the optical disk structure of Figure 1, which is equivalent to applicants' claims 1-6. It includes recording marks with a recording length shorter than 0.37λ / NA, wherein marks of less than 100 nm using a laser with a NA of 0.6 and λ = 635 nm [i.e. (0.37 * 635)/(0.6)], and it also operates by decomposition of noble metal oxides; however, it fails to disclose a recording medium that undergoes irreversible changes in the noble metal oxide layer when irradiated with light.

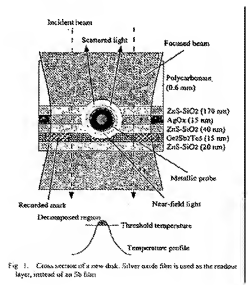

Fig. 1. Cross section of a new disk. Silver oxide film is used as the readout layer, instead of an Sb film

Nagase et al. teach a super-resolution recording and reproducing technique, which operates by causing an "irreversible change and forms an optical opening smaller

than spot size in a light spot center section was provided by irradiating with light of intensity of a recording level once" [0007]. Nagase et al. also teach "a super-resolution-reproducing film which forms an optical opening smaller than spot size in a light spot center section was provided by irradiating with light of intensity of a regeneration level" [0008].

Since Fuji et al., A Near-Field Recording and Readout Technology Using a Metallic Probe in an Optical Disk and Nagase et al. are both drawn to super-resolution optical recording and reproduction, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make use of the known improvement technique of irreversibly changing the recording layer on the base device of Fuji et al. The results of this improvement technique on the base device of Fuji et al. would have been obvious to one having ordinary skill in the art of optical recording disc manufacture.

With regard to claim 7, reflective layers are well known to be placed at any place in an optical recording medium stack, and in fact Nagase et al. use a reflective layer in their irreversible optical recording medium [0009]. It would have been obvious to one having ordinary skill in the art of optical recording media to include a reflective layer in the device of Fuji et al. at any point in the recording stack to facilitate an increased signal-to-noise of the recording medium.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-8 are directed to an invention not patentably distinct from claims 11-14 of commonly assigned Application No. 10/562,901, claims 1-5, 8, and 9 of commonly assigned Application No. 10/563,012, claims 1 and 2 of commonly assigned Application No. 10/561,090, claims 1 and 7 of commonly assigned Application No. 10/561,096, claims 1 and 2 of commonly assigned Application No. 10/561,408, and claim 1 of commonly assigned Application No. 10/581,633. Specifically, please see sections 11-14 below.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned applications, discussed in sections 11-14 below, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the

conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

11. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11-14 of copending Application No. 10/562,901. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a recording method for recording data onto an optical recording medium, which comprise a noble metal oxide recording layer sandwiched by the various dielectric layers; however, they fail to include a recording mark of less than $(0.37 * \lambda)/NA$ and specific recording powers. It would have been obvious to one having ordinary skill in the art to vary the laser wavelength to shorter wavelengths because that is one of the options available to optical recording media to increase the density of recording marks; further, it would have been obvious to experimentally vary the recording power to another power that would be appropriate for applicants' intended use.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Claims 1-8 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 8, and 9 of copending Application No. 10/563,012. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a recording method for recording data onto an optical recording medium, which comprise a noble metal oxide recording layer sandwiched by the various dielectric layers. Specifically, they claim a recording layer comprised of PtO_x; however, it fails to include a recording mark of less than $(0.37 * \lambda)/NA$. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary each of the individual thicknesses of all of the layers (dielectric, phase-change, and noble metal oxide layer) to any thickness of applicants' intended use. It is well-known in the optical recording media arts to vary the thicknesses of individual layers to adjust the amount of reflection of laser light or control the heat generated amongst the layers; furthermore, it would have been obvious to one having ordinary skill in the art to vary the laser wavelength to shorter wavelengths because that is one of the options available to optical recording media to increase the density of recording marks.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claim 8 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/561,090, claims 1 and 7 of copending Application No. 10/561,096, and claims 1 and 2 of copending Application No. 10/561,408. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both describe an optical recording medium comprising a recording layer comprised of a noble metal oxide, wherein the noble metal oxide is platinum oxide; however, it fails to include a recording mark of less than (0.37 * λ)/NA. Varying the thicknesses of layers, laser wavelength, and NA are all well-known in the art of super-resolution recording and reproduction. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary each of the individual parameters in any of the above applications to arrive at recording marks having lengths of less than (0.37 * λ)/NA.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claim 8 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/581,633. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both include an optical recording medium with a decomposition recording layer of platinum oxide; however, it fails to include a recording mark of less than (0.37 * λ)/NA. Varying the thicknesses of layers, laser wavelength,

and NA are all well-known in the art of super-resolution recording and reproduction. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary each of the individual parameters in any of the above applications to arrive at recording marks having lengths of less than (0.37 * λ)/NA.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-F 7:30am-5pm est. (1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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